

CLASSIFICATION **S-E-C-R-E-T**
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CENTRAL INTELLIGENCE AGENCY

50X1
REPORT NO. [Redacted]

INFORMATION REPORT

CD NO.

COUNTRY **East Germany**
SUBJECT **The Warnow-Werft, Warnemuende**

DATE DISTR. **1 September 1955**

NO. OF PAGES **11**

PLACE ACQUIRED [Redacted]
DATE OF INFO. [Redacted]

NO. OF ENCLS. (LISTED BELOW)

SUPPLEMENT TO REPORT NO.

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Attached is a report on the Warnow Werft in Warnemuende.
The plans and photographs referred to in the report are

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The Warnow-Werft (Shipyard) in Warnemuende

The Warnow-Werft, one of the East German shipyards, is designed for the construction of ships of up to about 10,000 taw and for repair work on ships of up to 25,000 taw.

Although it originated from the Boots- und Yachtwerft Kroeger (boat and yacht-building yard) as its core, it actually represents a new plant, since the capacity of even such a most efficient boat and shipbuilding yard would by no means be adequate to meet the requirements for such extensive work as, for example, the reconditioning of the raised vessels of the HANSA -Class of the Hapag (Hamburg American Line).

1. Location

The shipyard is located south of the Warnemuende harbor installations on the peninsula-shaped spit formed by the course of the Warnow River and the Brettlung in the east, and by the harbor basin in the northwest. The latter branches off from the so-called turning basin in a southwesterly direction. The landward border in the west runs along the Warnemuende-Rostock railroad line, while the southern border has not yet been clearly identified. For this reason it is impossible to give exact numerical data on the total area of the shipyard. In any case, a considerable portion of the site, on which the former "Arado Werke" was located, now belongs to the shipyard.

As the ground there is alluvial and extensive foundation work proved necessary for the construction of the workshops and the foundation of the heavy machine tools, in particular of the building slips. Fortunately, the bearing strata do not lie very deep in the earth. Nevertheless, certain difficulties were met with the construction of the installations requiring the increased raising of investment funds.

The foundation piles reaching through the covering layers as far as the bearing stratum in way of the building slips are 3.5 to 8 meters long.

2. Local and Inland Connectionsa. Waterways:

The local waterway connections of the shipyard are relatively favorable. The northern end of the shipyard area is located about 1 sea mile from the mouth of the Warnow River, since an imaginary line connecting the heads of the west and the east jetty, and the distance up river from the yard to Rostock is about 5.5 sea miles. The stretch of the Warnow River between the shipyard and the mouth of the river is 7 meters deep, while that between the yard and Rostock harbor is 6 meters deep. It seems doubtful, however, that the depths indicated are always actually maintained. In addition, the fairway is rather narrow throughout. In spite of extensive dredging, it is impossible to deepen the Warnow River. The fairway remains comparatively shallow, although it has repeatedly been officially announced that the water depth would be deepened so as to enable ships drawing more than 7 meters to ascend as far as the shipyard and Rostock. Drifting sand permanently and rather quickly refills the dredged channels and other dredged places.

On the whole, the maintenance of the channel of the Warnow River is rather expensive and, as a result, the exploitation of the Warnow-Werft for the construction and repair of large vessels and super-size ships will be handicapped by the water depth available there unless special ways and means are found to overcome the existing difficulties.

b. Street Connections:

The shipyard is located only a few hundred meters south of the town; paved streets are convenient for the shipyard workers going to or leaving the yard. There is also a good road leading to Rostock, but modern highways establishing the connection with distant places in the interior of the country do not exist.

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c. Railroad Connections:

The location of the shipyard on the Rostock-Warnemunde line to the Godser ferry permits direct railroad connection with the yard by short spur tracks which, in addition, were still in existence on the sites of the shipyard (formerly belonging to the Kroeger shipyard and the Arado Works). However, one of the two previous tracks of the railroad line leading to Rostock was dismantled by the Soviets in 1946.

As a result, certain difficulties in the prompt arrival of materials and other supplies are liable to occur if the line is also used for other heavy traffic. The bed of the second track is still usable.

3. Previous Development of the Shipyard

The Warnow-Werft developed from the former Kroeger-Werft. This shipyard built small utility vessels, sports vessels (yachts), wooden and steel-hull lifeboats and, during the period of rearmament in Germany, mainly air rescue craft. During World War II, small war vessels were built by this yard. As the shipyard had not suffered direct war damage, it was practically operational in 1945. It first was provisionally nationalized and put into operation to build fishing cutters as the first group of new vessels to be constructed under the shipbuilding reparations program.

In 1947, the Soviets ordered the shipyard to be expanded so as to be able to repair large passenger ships, beginning with the general overhaul and/or reconditioning of the steamers ASIA (captured ship DER DEUTSCHE, formerly SIERRA MORENA) and SUBIR (formerly OCEANA, formerly PEARL GYRE), which were taken into the yard.

Work on these vessels made but very slow progress because the installations of the Kroeger Werft were entirely inadequate for such tasks. In consequence, it proved necessary to begin the expansion work on the shipyard together with the repair or general overhaul on these ships. Considering the shortage of raw material, the inadequate industrial capacity of East Germany for such tasks, the scarcity of efficient and professionally experienced top personnel and highly qualified specialist workers, in addition to the incalculable character of the Soviet customers and their extremely high demands, this task could be taken in hand only because economical problems were, and still are, disregarded, in spite of all announcements and propaganda made to the contrary.

4. The Workshops and Operating Plants of the Warnow-Werft

The location of the various workshops and operating plants are shown on the plan of the shipyard (Attachment A). It clearly indicates the division of the shipyard services into two sections:

- a. The repair services is concentrated mainly on the southeast bank of harbor basin.
- b. The new construction section with the shipbuilding shop and the building slips forming the main plants is located at the eastern end of the shipyard at the cut opposite Kleiner Pagenwerder Island, including the outfitting quay north of it, which, however, has not yet been put into operation.

The layout of the repair section indicates that the organic possibility of its expansion to a shipbuilding plant, as, for example, in the case of the Mathias-Thoenen-Werft in Wismar, had not been considered when the original planning was drafted, or at least not with due foresight. In any case, it is impossible to use the main workshops simultaneously for repair work and new construction without putting up with very long ways of up to 1,000 meters.

It was not until the "Five-Year Plan for the National Economic Development of the German Democratic Republic (East Germany)" had been announced that the construction of large ships of up to 10,000 tdw in the Warnow Shipyard was feasible.

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It was as late as mid-1950 that the shipyard was given the site needed for the erection of the building slip installation. No usable buildings still existed there. All items left over and still usable after the air raids and the extensive dismantling had been made use of, after they were disassembled and transferred to the southern bank of the harbor basin. It is believed that the site of the building slips with the adjoining assembly yard, the shipbuilding shop, the ship-plate and other dumps was chosen with due consideration of the fact that the selection of another place might have impaired the repair yard. Another decisive factor possibly was the fact that the execution of the foundation work on this spot seemed to be most promising or simple. This advantage apparently seemed to be so important that the extensive dredging operations which proved necessary were made to prepare this site for the erection of the building slips and the dry dock installations originally planned there. A portion of the Kleiner Pagenwerder Island had to be entirely removed. In addition, rather extensive dredging operations had originally to be executed on the banks north and south of the building slips. However, all these operations made but very slow progress. It cannot be denied that the operations mentioned are indispensable, but the dredging installations as well as the firms and authorities in East Germany are absolutely unable to meet the requirements as far as the number and efficiency and the operational conditions of their mechanical equipment are concerned.

The building slip installation planned consists of four identical slips 100 meters long (see picture 1). For details and dimensions, see Attachment B.

The cable crane equipment for the slipway installation consists of a cableway arrangement whose supporting framework rests on three pillars which form two portals (see picture 2). For details see Attachment B. The carrying capacity of each rope trolley reportedly is 10 tons, and loads of up to 60 tons can be moved by connecting several trollies. When the completed northern part of the installation was put into operation, hand signaling was necessary at first during operation. Telephone connection between the slipway and the crane operators' cabins will eventually be installed.

Once completed according to plan, including the required dredging operations, the slipway installation will be a modern and most efficient plant. For the time being, however, it is only 50 percent complete, and is only partially used.

A large concrete surface, intended for the assembly of the sections and the transportation of the component parts manufactured or assembled in the shipbuilding shop, is located across the head end of the slipways. Prior to the completion of the cable crane installation, components were carried to the slipways on wooden sledges drawn by tractors.

This free surface extends as far as the shipbuilding shop and is serviced by the same cable cranes covering the slipways (see Attachments A and B).

As the four large slipways, construction of which was commenced in 1951, made comparatively slow progress and, by early November 1954, could not be used because of the dam lying in front of them, because the date of its removal could not be foreseen, a broadside slipway with a marine railway for the construction of the 62-meter passenger vessels to be delivered by the shipyard was built on a meadow site located to the south. It is possible, however, that the longitudinal strength of these inland vessels, which was considered too weak for longitudinal launching, was a decisive factor in the construction of this slipway. The marine railway could move vessels weighing up to 1,000 tons.

The shipbuilding shop allegedly is the largest plant of this kind in Europe. It consists of a steel framework with brick walling (see picture 3). Its size, dimensions and mechanical equipment, etc., are given in Attachment C. The material dump is located west of the shipbuilding shop. This dump is serviced by gantry cranes which carry the material to the straightening rollers. The location of the other workshops are indicated in Attachment A.

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A total quayside of 400 meters afford berths for ships under repair in the harbor basin, namely:

- a. About 280 meters of quayside with a maximum depth at the deepest spots on the northwest bank of the turning basin;
- b. About 120 meters of quayside, less than 5 meters deep alongside on the southeast bank of the turning basin.

These two sections are fitted with quay walls dating back to the period before World War I. It was still used as a coal loading berth in 1947. In addition, large ships under repair are mainly berthed at the section located nearest to the turning basin in the southeastern half of the harbor basin. According to available information, a kind of loading bridge rather than a firm quay wall seems to be available there. As the water is at least 7 meters deep at this spot, large ships could also be accommodated there. The berth for ships nearing completion was to be built on the west bank of the Warnow River north of the building slips, and about 120 meters of quayside allegedly was completed.

The original plan provided for a quay wall 400 to 500 meters long with favorably located outfitting shops in the vicinity. However, the construction of the wall had to be given up because of the lack of funds. For the same reasons, the sheet piling which was to replace the wall was not built.

5. Labor Force and Management of the Shipyard

a. Labor Force:

The total number of persons employed at the Warnow-Werft averaged between 9,500 and 10,000, including a considerable percentage of women and an extraordinarily high percentage of administrative employees (about 30 percent). Nevertheless, there is a serious shortage of efficient specialists for high-grade work, resulting in never-ending new demands for expert workers because of the continual difficulties in meeting the targets.

b. Leading Personnel:

Key employees were frequently changed, and still are, because of the practical impossibility of fulfilling tasks which are increasingly based on political viewpoints, on account of inadequate supply of material and delayed arrivals of supplies; furthermore, the political reliability and party membership of the leading personnel play a more important part than professional efficiency.

6. Summary

In spite of the large-scale planning for the Warnow-Werft, it will hardly be possible to achieve satisfactory results under the prevailing conditions.

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Legend to the Plan of the Warnow-Werft (Attachment A)Preliminary remark.

The open numbers indicate the buildings and installations which cannot be clearly identified.

The border line of the shipyard area in the south is still unknown, in the west and the northwest it runs along the railroad line.

It is not yet clear whether the shoreline between the northern tip of the shipyard area at the turning basin to the Warnow and the Brechtling has meanwhile been straightened as planned, or if the river banks partially are still as they were.

- A. Harbor basin, southeast side of which is used to berth ships under repair, is fitted with a quay wall only along the line marked "a". The remaining section of the bank was not yet completed, as indicated on the plan, and it rather looks like a bridge-shaped construction as shown in additional sketch 1.
- B. Turning basin
- C. Freight station Warnemuende
- D. Road from Warnemuende to Rostock
- E. The harbor installations of Warnemuende extend from this point in a northeasterly direction
- F. Kleiner Pagenwerder (Ladies-Insel)
- G. Pinnen-Graben
- H. To Warnemuende railroad station and the Gedser ferry terminal.
 - 1 - Building slip (for details, see **Attachment B**)
 - 1a - Broadside slip with marine railroad for the construction of river passenger vessels with slipway installation and a 5-ton gantry crane
 - 2 - Assembly yard (concrete-surface, 165 by 135-meter)
 - 3 - Shipbuilding shop (see **Attachment C**)
 - 4 - Material dump for new ships, serviced by two overhead traveling cranes
 - 5 - Administration office building
 - 6 - Design offices (wooden huts) for engine designers
 - 7 - Police and works guard
 - 8 - Material issue point
 - 9 - Gatekeeper
 - 10 - Engine building shop
 - 11 - Ship repair shop
 - 12 - Marine fitter's shop (?) and storage rooms
(Serial Nos 10 to 12 allegedly were halls or hangars of the former Arado-Works which had been dismantled and re-erected at the spots indicated)
 - 13 - Mechanical workshop
 - 14 - Tubemaker's shop
 - 15 - Unidentified
 - 16) - HO shop (commercial organization) and GDR party office
 - 17)
 - 18 - Mess hall and kitchen
 - 19 - Apprentice training shop
 - 20 - Polyclinic
 - 21 - Store house
 - 22 - Transformer No III

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- 23 - Unidentified
- 24) - HO shop (commercial organization) and SED party office
- 25)
- 26 - Office buildings and apprentice training shop (?)
- 27 - Boiler house
- 27a - Coal dump
- 28 - Unidentified
- 29 - Hall No 1: carpenter's shop for ship's outfit
- 30 - Hall No 2:) not yet built
- 31 - Hall No 3:)
- 32 - Hall No 4: locksmith's shop for ship's outfit
- 33 - Hall No 5: light-metal shop for ship's outfit
- 34 - Hall No 6: workshops for third firms of the electrotechnical line
(power current and low voltage current, telephone
installations, radio equipment)
- 35 - Hall No 7:) not yet built
- 36 - Hall No 8:)
- 37 - Hall No 9: painter's shop
- 38 - Outfitting quay for newly built ships. The quay is only partially
fitted with a quay wall; the sheet piling which was scheduled
as a substitute could not yet be fitted for lack of funds.
- 39 - Rigging loft, upholstery, sailmaker's shop (?)
- 40 - Unidentified
- 41 - Unidentified
- 42 - Transformer No I
- 43)
- 44) - Unidentified
- 45)
- 46 - Wood working shop
- 47 - Fire service station
- 48)
- through) Unidentified
- 55)
- 56 - Storage yards
- 57)
- through) Unidentified
- 60)
- 61 - Transformer No II
- 62 - Emergency heating house

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Attachment B:**Sheet No 1:**

- 1 - Waterside view of the rope support (slipway not shown)
- 2 - Top view of rope support
- 3 - Rope support seen from the north
- 4 - Looking in the direction of the heads of the slipways (marked _____ on sketch 5, sheet 2)

Sheet No 2:

- 5 - Looking at the slipway from the south

Details (referring to the two sheets):

- a - Crane operators' cabins (only on waterside support)
- b - Carrying ropes (only over slipways Nos I and II)
- b1 - Carrying rope without load, sag 7 meters
- b2 - / rope under load, sag 9 meters
- c - Center of slipway No IV
- d - Center of slipway No III
- e - Center of slipway No II
- f - Center of slipway No I
- g - Hoisting winch for the trolleys) one each per cable
- h - Driving winch for the trolleys)
- i - Center of outer pillars of rope supports
- k - Accommodation and dressing room for the crane operators (only fitted in the waterside rope support)
- l - Foundations of the pillars and struts of the rope carriers
- m - Shipbuilding shop (for details, see **Attachment C**)
- n - Assembly area for the volume sections, located between the slipway and the shipbuilding shop (a concrete-surfaced area of about 135 by 165 meters)
- o - Slipway
- p - concrete foundation of launching ways, inclination 1:20
- q - Bed plate of the slipway, made of concrete and 1.3 meters thick

Note: The entire slipway rests on concrete piles reaching down as far as the supporting layer of the subsoil.

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Attachment CLegend to Shipbuilding Shop of the Warnow-Werft

- A Tower building
 - B Pillars of cable crane support framework (landward side)
 - C Struts of the cable crane framework (landward side)
 - D Tracks linking dumps with workshop building (hall)
 - E Concrete surface between shipbuilding shop and slipways
-
- a Office room
 - b Lavatory for men
 - c Lavatory for women
 - d Hydraulic station
 - e Design office
 - f Staircase
 - g Repair office for the shipbuilding shop
 - h Office for the current supply of the building
 - i First aid station
 - k Entrance
 - l Ready-material store
-
- 1 Plate straightening rollers (in front of the westside of the
 - 2 Building at the outer end of the dump, - not marked on the plan)
 - 3 Tracing tables (24 in number)
 - 4 Plate receiving tables (17 in number)
 - 5 Unidentified
 - 6 Torch cutting tables (5 in number)
 - 7 Punching machine with shears
 - 8 Radial drilling machines (4 in number, two with double bench, and two with single bench)
 - 9 Drying devices (2 single-flame ones)
 - 10 Drying devices (2 twin-flame ones)
 - 11 Roller shears
 - 12 Plate shearing machines (two in number)
 - 13 Unidentified
 - 14 Three cylinder rollers
 - 15 Parallel planing machines (edge planing machines)
 - 16 Skin roller
 - 17 Hydraulic press
 - 18 Hydraulic press
 - 19 Parallel planing machine (edge planing machine)
 - 20 Automatic welding machine (not shown on plan)
 - 20a Torch cutting machine

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- 21 Frame annealing furnace
- 21a Exhaust gas duct for No 21
- 21b Smokestack for No 21
- 22 Mobile frame-bending machine (not shown on plan)
- 23 Frame bending plate
- 23a Frame bending plate with 220-hole plate
- 23b Frame bending plate with 112-hole plate
- 24 Tracing block for frames (2 in number)
- 25 Portable boring machine (not shown on plan)
- 26 Gas-heated forge (3 in number)
- 27 Tracing block for deck beams (2 in number)
- 28 Profiles dump
- 29 Unidentified
- 30 Portable frame bending machines (4 in number; not shown on plan)
- 31 Unidentified
- 32 Portable converter (not shown on plan)
- 33 through 35 Unidentified
- 36 Welding plate (3 in number each fitted with 231-hole plates)
- 37 slewing cranes (in way of pillars and workshops (halls),
26 in number each capable of lifting 1.5 tons) (not shown on plan)
- 38 Slewing cranes (2 in number each capable of lifting 3 tons,
not shown on plan)

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Legend to the Pictures of the Warron-Werft

Picture 1: Bird's eye view of the slipway plant

- 1 Ship plate dump
- 2 Shipbuilding shop
- 3 Landward supporting framework of the cable crane plant
- 4 Assembly area
- 5 Slipways
- 6 Waterside supporting frame of the cable crane plant

Picture 2: Cable crane plant seen from the northwest. The north wall of the shipbuilding shop is seen on the right-hand side of the picture, while the mess hall is seen in the middle. The smokestack belongs to the heating plant of the shipbuilding shop.

Picture 3: The shipbuilding shop seen from the southwest. The plate dump is in front of the high wall on the west side. The "tower" with the offices is on the extreme left. The armaling plant is on the south wall of the smokestack.

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